A scenic landscape with mountains and a sunset sky. The sky is a mix of orange and yellow, with a faint sun visible in the upper right. The mountains are layered, with the foreground being a dark green forested hillside and the background being hazy, blue-tinted mountain ranges.

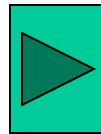
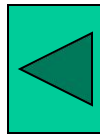
# 直线和椭圆的位置关系

苏清军

# 一复习回忆:

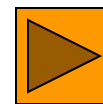
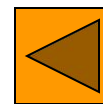
1. 曲线的交点
2. 直线和椭圆的位置关系
3. 直线  $y = kx + b$  与椭圆交于  $A(x_1, y_1), B(x_2, y_2)$  两点  
中点  $M\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right)$

弦长  $|AB| = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2} =$

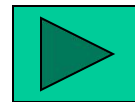
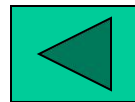


## 二 解题：

- 1 已知椭圆C:  $\frac{x^2}{2} + y^2 = 1$  , 直线L:  $y = 2x + m$  .
- 当m取何值时, (1) L与C有两个公共点;  
(2) L与C只有一个公共点;  
(3) L与C无公共点。



2 若椭圆的一个焦点是  $(0, 5\sqrt{2})$ ，且截直线  $3x-y-2=0$  所得弦中点的横坐标为  $\frac{1}{2}$ ，求椭圆的标准方程.



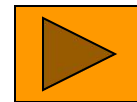
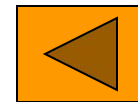
## 三小结：

1. 曲线的交点
2. 直线和椭圆的位置关系： $\Delta = 0, \Delta > 0, \Delta < 0$ .
3. 直线  $y = kx + b$  与椭圆交于  $A(x_1, y_1), B(x_2, y_2)$  两点  
中点  $M\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right)$

$$\text{弦长 } |AB| = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2} =$$

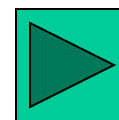
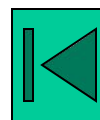
### 4. 方法：

- (1) 方程法：
- (2) 差减法。



# 四布置作业：

## 椭圆单元测试题（A）



再 见